

in a singular position. The legs, which resemble those of the lower Crustacea in their general characters, present at the base behind a sort of process, at the apex of which are the genital orifices.

Those of the first pair are much slenderer than the rest, and it is in them that the oviducts terminate.

The male glands are lodged within the legs, and open upon the processes by as many apertures as there are spermatogenous capsules. Thus the ten posterior legs are male, and the two anterior female. Hence fecundation must take place within the pouch in which the body is suspended, and the utricles serve at once for absorption by its outer surface and for reproduction by its inner surface, as a true incubation takes place in its cavity. The author has observed all the details of the embryogeny of this singular parasite.

He also remarks upon the great development of the liver, and its position in the midst of the venous network of the carapace, which directly receives the nutritive fluid from without. Bile is secreted in great quantities, although scarcely any digestion can be said to take place; hence he infers that the liver must be regarded as a purifier or modifier of the fluids intended for nutrition, and that its function in digestion in the higher animals is probably to be regarded as a secondary one.—*Comptes Rendus*, Nov. 13th, 1865, p. 838.

On the Development of the Axolotl (Siredon mexicanus vel Humboldtii). By A. DUMÉRIL.

On the 17th April last, M. Duméril communicated to the Academy of Sciences some observations on the development of young Axolotls from ova deposited in the Menagerie at the Muséum d'Histoire Naturelle; and from that date to the month of September the development of these animals continued without presenting any phenomena calling for special notice. The animals having then attained a length of 0·21 metre, nearly equal to that of their parents (0·25 m.), one of them, which had not been particularly observed for a fortnight, suddenly attracted attention by presenting an aspect quite different from that of the other specimens of the same age. It no longer possessed branchial tufts, or only retained traces of them; the membranous crests of the back and tail had disappeared; the form of the head was slightly modified; and there appeared on the body and limbs numerous yellowish-white spots, which contrasted strikingly with the general blackish colour. On the 28th September a second individual had undergone the same change, and on the 7th October a third presented it in a less advanced form.

On the 10th October M. Duméril was enabled to observe this metamorphosis from its commencement. On this day some yellowish-white points made their appearance on the limbs of a specimen, and the portion of the crest nearest to the head was effaced. Between this day and the 25th October the crest disappeared throughout its whole extent, the branchial lamellæ and subsequently the appendages supporting them gradually diminished in length, until on the 6th November there were only three little projections, scarcely apparent above the skin, on the sides of the neck. The head had decreased

0.005 m. in breadth at the level of the anterior branchiæ. The crests had entirely disappeared.

These external metamorphoses are accompanied by internal modifications comparable with those observed in the Urodelous Batrachia when passing from the larval to the adult state. The anatomical examination of the hyo-branchial apparatus in the second metamorphosed Axolotl (28th September) proved that the three inner branchial arches had disappeared, the external arch only remaining; and this, deprived of its membranous denticulations and united by an articulation with the thyroid cornu, formed the posterior joint of the latter. Outside this piece the anterior branch of the hyoid is to be seen on each side. The basi-hyal was much developed, and in it, as in the other portions of the hyoid, ossification had commenced.

These unexpected facts would almost lead one to suppose, with Cuvier, that the Axolotls, hitherto regarded as perennibranchiate Batrachia, may be the larvæ of species destined hereafter to take a place in the group of those which undergo a metamorphosis and lose their branchiæ. If this be the case, the individuals with long external branchial tufts which have lived for nearly two years in Paris, and from which these young animals were procured, would only be larvæ, notwithstanding their power of reproduction*. But if this supposition be accepted, how are we to explain the rapid metamorphosis of these animals of eight months old, when the individuals brought to France from Mexico in 1863 have undergone no change except an increase in size?—*Comptes Rendus*, November 6, 1865, pp. 775-778.

On the Multiplicity and Termination of the Nerves in the Mollusca.

By M. LACAZE-DUTHIERS.

Few animals are so richly provided with nerves as the Mollusca; hence, when they are studied anatomically, it is difficult to understand the name of *Apathique* which Lamarck gave to the general group in which he placed them.

I take *Thetys leporina* as an anatomical and histological type. This species presents in its tissues an abundance of nerves surpassing anything that could be imagined from what exists in the higher animals. In a general investigation of its organization I shall indicate in detail the very peculiar arrangement presented by its central nervous system. The only object of the present memoir is to make known the distribution of the nerves in the buccal veil, and their mode of termination in the barbules which fringe the margins of that organ.

It is well known that, around the mouth, the lips of which are produced into a trunk, the *Thetys* has a large funnel-shaped mem-

* M. de' Filippi has found spermatozoids and mature ova in individuals of *Triton alpestris*, which, from the persistence of the external branchial tufts and the imperfection of their palatine dental system, appeared to be still in the larval or tadpole state (*Archivio per la Zoologia*, tom. ii. pp. 206-211).